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# PRODUCTION OF SPINEL

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| Inventor(s): | HIBINO TOSHIYUKI; TSUNASHIMA GUN |
| Applicant(s):: | AGENCY OF IND SCIENCE & TECHNOL |
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## Abstract

PROBLEM TO BE SOLVED: To provide a method for producing a spinel at a lower temperature than that used at the time of producing the spinel with a conventional technique comprising solid phase reaction of Al2O3 with MgO or thermal decomposition of a coprecipitate and also to provide a precursor for the spinel production.

SOLUTION: This production comprises: subjecting a precursor for the spinel production, that consists of a hydrotalcite-like compound, to thermal decomposition at 350 to 500 deg.C to convert the precursor into an oxide, wherein the precursor is represented by the formula Mg1-xAlx(OH)zAa.bH2O A is an inorganic anion releasable from the compound at the time of calcining it at 350 to 500 deg.C; (x) is a numerical value of 1/5 to 1/3; (a) is a numerical value that meets the formula a=x/n ((n) is a valence of the anion A); and (b) is an indefinite number); thereafter, immersing the resulting oxide in water or an aq. solution contg. inorganic anions equivalent to the inorganic anions A in the above formula to regenerate a compound having the hydrotalcite-like compound structure from the oxide; again calcining the regenerated compound at 350 to 500 deg.C, or when no spinel is formed at this point of time, further repeating the regeneration of a hydrotalcite-like compound and the calcination of the regenerated hydrotalcite-like compound at 350 to 500 deg.C until the objective spinel is formed; and thereafter, eluting and removing byproduct magnesium oxide from the regeneration/ calcination product with an acidic aq. solution.

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